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TECHNICAL REPORT

For The

Cargo Movement Operations System (CMOS)
Software Requirements Specification (Final)

12 March 1990



Science Applications International Corporation
An Employee-Owned Company

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For The
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Prepared under
Contract Number F11624-88-D-0001/6K12
CDRL #A004-20

Prepared for
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Deputy Chief of Staff for Acquisition
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SECTION I.

INTRODUCTION. The purpose of this Technical Report is to review the Final Software Requirements Specification, CDRL A003-04, which has been produced for the Government by Evaluation Research Corporation. The results are provided in the form of Data Item Discrepancy Worksheets as requested by the CMOS Program Office.

SUMMARY. Not Used.

CONCLUSION. Not Used.

SECTION II.

RESULTS. The SAIC analysis is provided in the attached Data Item Discrepancy Worksheets. They are separately divided into Applications, Communications, and System Environment CSCI comments to be consistent with the format of the SRS.

The following items in this report are resubmissions of comments previously provided in the SRS (Draft): SRS2-0001, SRS3-0001, 0002, and 0004. In every instance except one, they were submitted to ERC for action. ERC incorporated some of these recommendations in the SRS (Final); however, we believe that further modifications are required to completely address these deficiencies.

APPLICATIONS CSCI

The following comments are related to the
Software Requirements Specification Applications CSCI

ORIGINATOR CONTROL NUMBER: SRS1-0001
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: Ronald J. Lacour

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 67

PARA NUMBER: 3.2.2.3.3

COMMENT OR RECOMMENDED CHANGE:

Change this paragraph to correct improper inclusion of performance information under the purposes satisfied.

RATIONALE:

When correcting a previous deficiency with this paragraph, the "Performance in measurable terms" information was inadvertently placed under the "Purpose and requirements satisfied" subparagraph. The data was placed in the wrong subparagraph and correct data, previously in the purposes area, was erroneously deleted.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

ORIGINATOR CONTROL NUMBER: SRS1-0002
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: Ronald J. Lacour

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 86

PARA NUMBER: 3.2.3.1

COMMENT OR RECOMMENDED CHANGE:

Allocate SS0560 to SC131 or to one of its subordinates.

RATIONALE:

SS0560 is allocated to SC131 in the RTM and in the previous SRS.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

ORIGINATOR CONTROL NUMBER: SRS1-0003
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: Ronald J. Lacour

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 103

PARA NUMBER: 3.2.4.5

COMMENT OR RECOMMENDED CHANGE:

Allocate SS0247 to SC145 or to one of its subordinates.

RATIONALE:

SS0247 is allocated to SC145 in the RTM and in the previous SRS.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

ORIGINATOR CONTROL NUMBER: SRS1-0004
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: Vivian L. Martin

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 111

PARA NUMBER: 3.8.1

COMMENT OR RECOMMENDED CHANGE:

Define "backlog screen".

RATIONALE:

The phrase "backlog screen" cannot be interpreted in its context. Records are not stored in screens, but are presented to the user via screens. "Backlog" can have both a functional and a systemic connotation. Therefore, an explanatory sentence, defining how a "backlog screen" relates to the deletion of records under the proper functional conditions (including proper read/write privilege), is necessary.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

ORIGINATOR CONTROL NUMBER: SRS1-0005
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: Vivian L. Martin

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: C-6

PARA NUMBER: ERD_5E;6

COMMENT OR RECOMMENDED CHANGE:

Identify the relationships between the data entities listed below and the rest of the ERDs.

RATIONALE:

All data entities identified as part of the system should have some relationship to other entities. The system administrator entity is missing; therefore, seven entities on page C-6 have no entity to relate them to the rest of the diagrams. The system administrator could be considered a unique entity, or it could be considered an occurrence of DE0012 INDIVIDUAL. This would allow all relationships for DE0089, '90, '92, '93, '94 (which has one relationship, DR0141 with DE0012 and possibly others), '96, '97, and '98 to be identified.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

ORIGINATOR CONTROL NUMBER: SRS1-0006
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBE.: A004-04

DATE: 03/02/90

ORIGINATOR NAME: Vivian L. Martin

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: C-6

PARA NUMBER: ERD_5E;6

COMMENT OR RECOMMENDED CHANGE:

Identify the relationship between the data entity DE0095_ARCHIVE_HISTORY and the rest of the ERDs.

RATIONALE:

All data entities identified as part of the system should have some relationship to other entities. DE0095_ARCHIVE_HISTORY has relationships with other entities whose candidate keys include the TCN.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

COMMUNICATIONS CSCI

The following comments are related to the
Software Requirements Specification Communications CSCI.

ORIGINATOR CONTROL NUMBER: SRS2-0001
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A003-04

DATE: 03/02/90

ORIGINATOR NAME: John J. Brassil

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 42

PARA NUMBER: 3.6

COMMENT OR RECOMMENDED CHANGE:

Specify the resources required of both memory and the CPU for this CSCI.

RATIONALE:

Paragraph 10.1.5.6 of DI-MCCR-80025A specifically requires that paragraph 3.6 "shall specify the amount and, if applicable, location of internal and auxiliary memory, and the amount of processing time allocated to the CSCI". The referenced information in the SSDD also does not identify internal memory or auxiliary memory (disk storage) by CSCI. Additionally, the requirement to provide specifications for the allocation of processing time is not currently addressed in this SRS, nor is it addressed in the SSDD.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

ORIGINATOR CONTROL NUMBER: SRS2-0002
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: John J. Brassil

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 47

PARA NUMBER: 4.1

COMMENT OR RECOMMENDED CHANGE:

Change Table 4.1 so that it addresses requirements instead of capabilities, and add the appropriate test-name identifiers for those requirements.

RATIONALE:

Paragraph 10.1.6.1 of the DID requires that paragraph 4.1 "specify the qualification methods to be used to ensure that the CSCI requirements of section 3 and 5 have been satisfied." The current version of Table 4.1 lists CAPABILITIES under the "Requirement Name" column rather than REQUIREMENTS. In addition, only one of the capabilities has a formal test associated with it in this paragraph. Paragraph 4.1 is required to list the qualification methods for all requirements, not just those which involve a special test. To correct the deficiencies with Table 4.1, the capabilities should be replaced with their corresponding requirements (shall statements), and a test for each requirement or group of requirements should be identified. These tests should correspond to those identified in the Software Test Plan.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

ORIGINATOR CONTROL NUMBER: SRS2-0003
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: John J. Brassil

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 47

PARA NUMBER: 4.2

COMMENT OR RECOMMENDED CHANGE:

Change both occurrences of "handler" in the first sentence of subparagraph c. to "adapter".

RATIONALE:

This paragraph deals with special qualification requirements for the DDN Adapter. The incorrect use of the word "handler" makes it appear as though the paragraph is referring to the Government furnished DDN software.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

SYSTEM ENVIRONMENT CSCI

The following comments are related to the
Software Requirements Specification System Environment CSCI.

ORIGINATOR CONTROL NUMBER: SRS3-0001
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: John J. Brassil

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 9

PARA NUMBER: 3.1

COMMENT OR RECOMMENDED CHANGE:

Change this paragraph so that the interfaces addressed at the 3.1.x level are of the same logical size, i. e., the CSCI/HWCI level.

RATIONALE:

Paragraphs 3.1.3 and 3.1.4 address external interfaces to the other two CSCIs in a brief summary format as required by the DID. In contrast, paragraph 3.1.1 lists and describes individual interfaces between a specific software item, the UNIX operating system, and components of the Host Processor HWCI. Similarly, paragraph 3.1.2 lists and describes individual interfaces between another specific item, the MS-DOS operating system, and components of the PC Workstation HWCI. To improve upon the applicable subparagraphs, the following actions should be taken: (1) Paragraphs 3.1.1 and 3.1.2 should provide the same level of brief description found in paragraphs 3.1.3 and 3.1.4. (2) The detailed information currently presented in paragraphs 3.1.1 and 3.1.2 should be incorporated into paragraph 3.4.2 where it is required. (3) The interface to the LAN HWCI should be described in an additional subparagraph, 3.1.5, instead of being broken into subparagraphs 3.1.1.8 and 3.1.2.6.

CMOS PMO ACCEPTS COMMENT: YES ☐ NO ☐

ERCI ACCEPTS COMMENT: YES ☐ NO ☐

COMMENT DISPOSITION:

COMMENT STATUS: OPEN ☐ CLOSED ☐

ORIGINATOR CONTROL NUMBER: SRS3-0003
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: John J. Brassil

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 31

PARA NUMBER: 3.3

COMMENT OR RECOMMENDED CHANGE:

Add additional paragraphs under section 3.3 so that all the interfaces identified in Figures 3.3a and 3.3b are described, and use the same name for items in paragraph titles and in the figures. In addition, the matrix should be balanced.

RATIONALE:

There are 36 "direct" internal interfaces identified in the matrix on page 32. Only 13 of these are described in Section 3.3. In addition, the names used in the paragraph titles are not the same names given to the System Environment components in the matrix. For consistency, these names should be the same. Finally, the interfaces of SC3C to SC35 and SC37 are not marked below the diagonal in the matrix.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []

ORIGINATOR CONTROL NUMBER: SRS3-0004
PROGRAM OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A004-04

DATE: 03/02/90

ORIGINATOR NAME: John J. Brassil

OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X EDITORIAL:

PAGE NUMBER: 37

PARA NUMBER: 3.6

COMMENT OR RECOMMENDED CHANGE:

Specify the resources required of both memory and the CPU for this CSCI.

RATIONALE:

Paragraph 10.1.5.6 of DI-MCCR-80025A specifically requires that paragraph 3.6 "shall specify the amount and, if applicable, location of internal and auxiliary memory, and the amount of processing time allocated to the CSCI." The referenced information in the SSDD also does not identify internal memory or auxiliary memory (disk storage) by CSCI. Additionally, the requirement to provide specifications for the allocation of processing time for this CSCI is not currently addressed in this SRS, nor is it provided in the SSDD.

CMOS PMO ACCEPTS COMMENT: YES [] NO []

ERCI ACCEPTS COMMENT: YES [] NO []

COMMENT DISPOSITION:

COMMENT STATUS: OPEN [] CLOSED []